

# Visualising and thinking and interpreting. Response to the Burstyn and De Roos comments on Sorahan, T. multiple myeloma and glyphosate use: a re-analysis of US Agricultural Health Study (AHS) data.

Sorahan, Thomas

DOI:

[10.3390/ijerph14010006](https://doi.org/10.3390/ijerph14010006)

License:

Creative Commons: Attribution (CC BY)

*Document Version*

Publisher's PDF, also known as Version of record

*Citation for published version (Harvard):*

Sorahan, T 2016, 'Visualising and thinking and interpreting. Response to the Burstyn and De Roos comments on Sorahan, T. multiple myeloma and glyphosate use: a re-analysis of US Agricultural Health Study (AHS) data.', *International Journal of Environmental Research and Public Health*, vol. 14, no. 6.  
<https://doi.org/10.3390/ijerph14010006>

[Link to publication on Research at Birmingham portal](#)

## General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

## Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.

Download date: 05. May. 2023



Reply

## Visualising and Thinking and Interpreting. Response to the Burstyn and De Roos Comments on Sorahan, T. Multiple Myeloma and Glyphosate Use: A Re-Analysis of US Agricultural Health Study (AHS) Data. *Int. J. Environ. Res. Public Health* 2015, 12, 1548–1559

Tom Sorahan

Institute of Applied Health Research, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK;  
t.m.sorahan@bham.ac.uk; Tel.: +44-121-414-3644

Academic Editor: Paul B. Tchounwou

Received: 16 December 2016; Accepted: 16 December 2016; Published: 22 December 2016

I am grateful to the Editor for the opportunity of responding to the recent paper of Burstyn and De Roos [1], that is in part, a critical commentary of my own analysis of data from the US Agricultural Health Study (AHS) concerning the findings for multiple myeloma and glyphosate use [2].

Firstly, I agree with Burstyn and De Roos that the more important findings from any epidemiological study are those relating to levels of estimated or measured exposure (so-called dose-response analyses) rather than simple ever/never exposed comparisons. That is why, in my own analyses, I showed the results of eight dose-response analyses; none was statistically significant and most were a long way from being statistically significant. So why did I also put some considerable effort into working out whether there was any basis for preferring one of the two findings supplied by De Roos et al. [3] for ever-use of glyphosate? [3]: Rate ratio (RR) of 1.1, 95% Confidence Interval (CI) 0.5 to 2.4, in full dataset adjusted for age only; RR of 2.6, 95% CI 0.7 to 9.4, in restricted dataset with adjustment for many variables. It is because one could be reasonably confident that one or other of these values would be used in future meta-analyses that would, by necessity, be limited to making use of these simplistic overall findings. It would, therefore, be important to know which estimate could be relied upon. I have checked the logic and language in my original paper and my conclusion that the risk estimate of 2.6 arose from the use of a restricted dataset that, probably by chance, turned out to be unrepresentative, is correct, polite and fair. Burstyn and De Roos [1] would appear to agree with this when they state ‘there is likely selection bias adversely affecting the analysis with ever- vs. never-exposed.’

Burstyn and De Roos [1] are concerned about relying on ‘intuition’, and sole reliance on any single skill or aptitude is probably dangerous. But on first reading of the De Roos et al. paper [3] more than ten years ago, I strongly suspected that something very odd must be going on to produce such disparate findings for ever-use of glyphosate. Whether that is intuition or experience is a moot point.

Finally, I fully agree with Burstyn and De Roos [1] that an updated AHS needs to be analysed. The pesticide applicators that are participating in this key survey are stakeholders. Can’t they make representations to bring such an analysis about?

**Acknowledgments:** The preparation of this reply was unfunded. The Editor kindly waived any costs to publish in open access.

**Conflicts of Interest:** The author has received consultancy fees and expenses from the Monsanto Company in recent years, most notably to carry out secondary analyses of the AHS, to attend the IARC Monograph meeting for

Volume 112 in Lyon, France, as an observer, to take part in an Expert Panel Review, and to make epidemiological presentations to meetings and conferences in the USA and China.

## References

1. Burstyn, I.; De Roos, A. Visualising heterogeneity of effects in analysis of associations of multiple myeloma with glyphosate use. *Int. J. Environ. Res. Public Health* **2017**, *14*, 5 [[CrossRef](#)]
2. Sorahan, T. Multiple myeloma and glyphosate use: A re-analysis of US Agricultural Health Study (AHS) data. *Int. J. Environ. Res. Public Health* **2015**, *12*, 1548–1559. [[CrossRef](#)] [[PubMed](#)]
3. De Roos, A.J.; Blair, A.; Rusiecki, J.A.; Hoppin, J.A.; Svec, M.; Dosemeci, M.; Sandler, D.P.; Alavanja, M.C. Cancer incidence among glyphosate-exposed pesticide applicators in the Agricultural Health Study. *Environ. Health Perspect.* **2005**, *113*, 49–54. [[CrossRef](#)] [[PubMed](#)]



© 2016 by the author; licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).